REMARKS

The present amendment is in response to the Official Action mailed September 24, 2004 in the above-identified patent application. Enclosed herewith is a Petition requesting a three-month extension of time for resetting the deadline for responding to the Official Action from December 24, 2004 to and including March 24, 2005.

In the Official Action, claims 1-4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Carey et al. U.S. Patent No. 5,597,469 ("*Carey*") in combination with either Yeh et al. U.S. Patent No. 5,803,340 ("*Yeh*") or Pierson U.S. Patent No. 5,938,106 ("*Pierson*"). The Examiner essentially contends that *Carey* teaches applying solder through a soldermask to a substrate having solder-wettable pads. The solder is reflowed and solidified to form the contact. The Examiner further contends that *Carey* teaches applying solder-wettable material to the soldermask prior to applying the solder thereby forming a soldermask having both solder-wettable areas and non solder-wettable areas.

Although the Examiner acknowledges that *Carey* fails to teach cooling the solder to solidify the solder into a solder ball, the Examiner contends that *Yeh* and *Pierson* teach this recitation, and that it would have been obvious at the time of the present invention to combine the teaching of *Carey* with either the teaching of *Yeh* or *Pierson* to render claims 1-4 of the present application obvious and thus unpatentable.

With all due respect to the Examiner, Applicants assert that *Carey* does not teach all of the recitations asserted by the Examiner, which are included within claim 1 of the present application. Specifically, *Carey* discloses a process for selective application of solder to circuit packages including providing a substrate 12 with a layer 16 disclosed on the substrate. Layer 16 is patterned from apertures exposing a

surface of substrate 12 in order that pad 14 may be disposed on a substrate and still remain exposed. Layer 16 is comprised of a non-solder-wettable material. A solder-wettable conductive layer 20 is disposed over substantially the entire device. A second layer 30, preferably a dielectric material, is disposed on layer 20 at the desired locations to prevent solder from adhering to unwanted locations on the device. The second layer 30 of dielectric material is not placed over the conductor pad 14 at the edges of the solder-wettable layer 20 adjacent to and within the cut out portion of layer 16. Subsequently, a solder material 40 is deposited by electroplating (col. 5, lns. 34-36) on exposed surfaces of conducting layer 20. The second layer 30 and portions of layer 20, not covered by the deposited solder material, are selectively etched away. The solder is reflowed causing the solder-wettable material layer 20 to be dissolved in the solder material. (Col. 5, lns. 63-67.)

With specific reference to FIG. 6, solder material 40 remains in contact with layer 16 even after solder is reflowed. Thus, *Carey* teaches a method of forming a solder deposit on portions of a conductive layer in apertures adjacent a second layer of non-solder-wettable material by chemically replacing the conductive material in the conductive layer with at least one material which is also contained in the solder material by electro-chemical exchange.

Applicants therefore assert that *Carey* does not teach, "cooling the solder and pads to solidify the solder and thereby provide solder masses projecting through said openings in said potential plane element, at least some of said solder masses being electrically isolated from said potential plane element," as included within present claim 1. Additionally, layer 16, as disclosed in *Carey*, is not only not possibly an "electrically conductive" potential plane element as recited in claim 1, but layer 16 may be a thick film dielectric without conductive

properties. (*See* col. 6, lns. 47-49.) Thus, layer 16 cannot be said to have similar properties and carry similar functions as a potential plane element included within claim 1 of the present application. As layer 20 dissolves in the solder during reflow, layer 20 no longer exists when the solder is cooled. It cannot constitute the potential plane element referenced to in this clause of the claim.

Yeh and *Pierson*, which are cited for teaching cooling the solder to solidify the solder into a solder ball, also have not been alleged to teach anything relevant to an electrically conductive potential plane included in the component having the pads, or cooling solder masses so that the solder masses project through openings on such a potential plane but are "at least some of the solder masses being electrically isolated from the potential plane," as included within claim 1 of the present application.

Specifically, *Yeh* discloses a composition made up of solder. Although *Yeh* does teach utilizing a dry film photo resist mass 14, at not point does *Yeh* disclose that such mass may be a potential plane element. *Pierson* is directed to a method and apparatus for depositing solder onto a substrate. Although *Pierson* teaches depositing the solder onto pad 6 of a flexible circuit 2, *Pierson* also does not disclose the incorporation of the potential plane element into a component and having that element electrically isolated from at least some of the solder masses.

Thus, for the above-mentioned reasons, claim 1 should be allowed. Additionally, since claims 2-4 depend from claim 1 and therefore include all of the limitations of claim 1, claims 2-4 should also be allowed.

If, however, for any reason the Examiner does not believe such action can be taken, it is respectfully requested that he telephone Applicants' attorney at (908) 654-5000 in order to overcome any objections which he may have.

If there are any additional charges in connection with this requested amendment, the Examiner is authorized to charge Applicants' Deposit Account No. 12-1095 therefor.

Dated: March 18, 2005

Respectfully submitted,

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